AMENDMENT

Amendment to the Claims

Claim 1 (previously presented). A method of detecting an activity of a COX-2 enzyme in a subject, comprising:

a) obtaining a sample of the subject; and

b) detecting a COX-2 specific metabolite of a 2-arachidonylglycerol compound in the sample, wherein the presence of the COX-2 specific metabolite in the sample indicates the activity of the COX-2 enzyme in the subject.

Claim 2 (original). The method of claim 1, wherein the metabolite comprises a prostaglandin-glycerol ester.

Claim 3 (original). The method of claim 1, wherein the metabolite is selected from a group consisting of: prostaglandin H_2-glycerol ester, prostaglandin E_2-glycerol ester, 15-keto-prostaglandin E_2-glycerol ester, 13,14-dihydro-15-keto-prostaglandin E_2-glycerol ester, prostaglandin D_2-glycerol ester, prostaglandin $F_{2\alpha}$-glycerol ester, thromboxane A_2-glycerol ester, thromboxane B_2-glycerol ester, prostacyclin-glycerol ester, 6-keto-prostalandin $F_{1\alpha}$-glycerol ester, prostanglandin A_2-glycerol ester, and prostaglandin B_2-glycerol ester.

Claim 4 (original). The method of claim 1, wherein the metabolite comprises a 6-keto-

prostaglandin $F_{1\alpha}$-glycerol ester.

Claim 5 (original). The method of claim 1, wherein the subject comprises a human.

Claim 6 (original). The method of claim 1, wherein the subject comprises a non-human mammal.

Claim 7 (original). The method of claim 1, wherein the subject comprises a cultured cell.

Claim 8 (original). The method of claim 1, wherein the detecting step includes generating a mass spectrum of the metabolite.

Claim 9 (canceled).

Claim 10 (original). The method of claim 1, wherein the sample comprises urine.

Claim 11 (original). The method of claim 1, wherein the sample comprises plasma.

Claim 12 (original). The method of claim 1, wherein the sample is selected from a group consisting of: cerebrospinal fluid, saliva, sputum, bile, joint fluid, biopsy, and conditioned media from a cell culture.

Claim 13 (previously presented). A method of measuring an activity of a COX-2 enzyme in a subject, comprising:

a) obtaining a sample of the subject;

b) measuring an amount of a COX-2 specific metabolite of a 2-arachidonylglycerol compound in the sample; and

c) relating the amount of the COX-2 specific metabolite to the activity of the COX-2 enzyme.

Claim 14 (previously presented). The method of Claim 13, further comprising comparing the amount measured to a standard value, which correlates to an amount of signal with a known amount of a COX-2 specific metabolite of a 2-arachidonylglycerol compound.

Claim 15 (original). The method of claim 13, further comprising generating a standard curve.

Claim 16 (original). The method of claim 13, wherein the metabolite comprises a prostaglandin-glycerol ester.

Claim 17 (original). The method of claim 13, wherein the metabolite comprises a 6-keto-prostaglandin $F_{1\alpha}$-glycerol ester.

Claim 18 (original). The method of claim 13, wherein the subject comprises a human.

Claim 19 (original). The method of claim 13, wherein the measuring step includes generating a mass spectrum of the metabolite.

Claim 20 (original). The method of claim 13, wherein the sample comprises urine.

Claim 21 (original). The method of claim 13, wherein the sample comprises plasma.

Claim 22 (original). The method of claim 13, wherein the sample is selected from a group consisting of: cerebrospinal fluid, saliva, sputum, bile, joint fluid, biopsy, and conditioned media from a cell culture.

Claim 23 (original). A method of detecting an activity of a COX-2 enzyme in a human subject, comprising:

a) obtaining a sample of the subject; and

b) detecting a metabolite of a COX-2 selective substrate in the sample, wherein the presence of the metabolite in the sample indicates the activity of the COX-2 enzyme in the subject.

Claim 24 (original). The method of claim 23, further comprising measuring an amount of the metabolite in the sample.

Claim 25 (previously presented). The method of claim 24, further comprising relating the amount of the metabolite in the sample to the activity of the COX-2 enzyme in the subject, and relating said amount of the COX-2 specific metabolite to the activity of the COX-2 enzyme.

Claim 26 (original). The method of claim 23, wherein the metabolite comprises a prostaglandin-glycerol ester.

Claim 27 (original). The method of claim 23, wherein the metabolite comprises a 6-keto-prostaglandin F_{1a}-glycerol ester.

Claim 28 (canceled).

Claim 29 (original). The method of claim 23, wherein the measuring step includes generating a mass spectrum of the metabolite.

Claim 30 (original). The method of claim 23, wherein the sample comprises urine.

Claim 31 (original). The method of claim 23, wherein the sample comprises plasma.

Claim 32 (original). The method of claim 23, wherein the sample is selected from a group consisting of: cerebrospinal fluid, saliva, sputum, bile, joint fluid, biopsy, and conditioned media from a cell culture.

Claim 33 (original). A method of detecting a COX-2 activity in a sample, comprising:

a) adding a COX-2 selective substrate to the sample; and

b) detecting a metabolite of the COX-2 selective substrate in the sample, wherein the presence of the metabolite indicates activity of the COX-2 enzyme in the sample.

Claim 34 (original). The method of claim 33, wherein the COX-2 selective substrate comprises an arachidonylglycerol ester.

Claim 35 (original). The method of claim 33, further comprising measuring an amount of the metabolite.

Claim 36 (original). The method of claim 33, further comprising relating the amount of the metabolite to the activity of the COX-2 enzyme.

Claim 37 (original). The method of claim 33, wherein the metabolite comprises a prostaglandin-glycerol ester.

Claim 38 (original). The method of claim 33, wherein the metabolite is selected from a group consisting of: prostaglandin H_2-glycerol ester, prostaglandin E_2-glycerol ester, 15-keto-prostaglandin E_2-glycerol ester, 13,14-dihydro-15-keto-prostaglandin E_2-glycerol ester, prostaglandin D_2-glycerol ester, prostaglandin $F_{2\alpha}$-glycerol ester, thromboxane A_2-glycerol ester,

thromboxane B_2-glycerol ester, prostacyclin-glycerol ester, 6-keto-prostaglandin $F_{1\alpha}$-glycerol ester, prostaglandin A_2-glycerol ester, and prostaglandin B_2-glycerol ester.

Claim 39 (original). The method of claim 1, wherein the metabolite comprises a 6-keto-prostaglandin $F_{1\alpha}$-glycerol ester.

Claims 40-86 (canceled).